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(54) **WELL PLUG ANCHOR TOOL**

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E21B 23/01 (2006.01)
E21B 33/1295 (2006.01)

(52) **U.S. Cl.**
CPC ***E21B 33/12955*** (2013.01); ***E21B 23/01*** (2013.01)

(58) **Field of Classification Search**
CPC E21B 23/01; E21B 33/1292; E21B 23/06; E21B 33/1293
See application file for complete search history.

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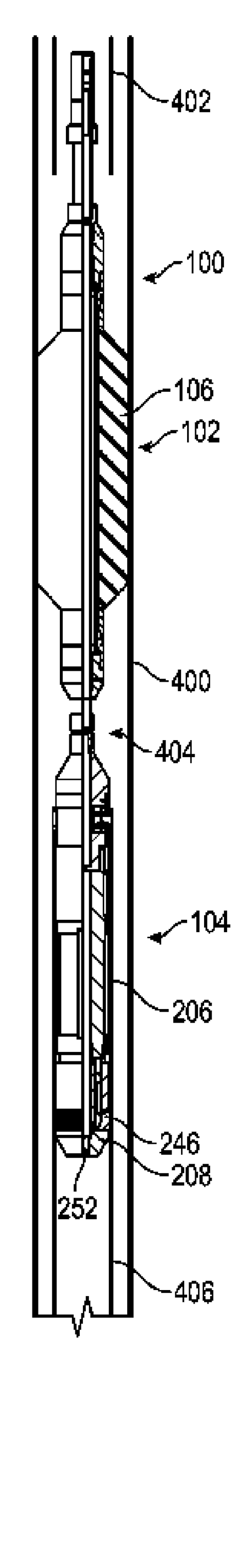
(57) **ABSTRACT**

A plug assembly, an anchor tool for a plug, and methods for deploying a plug in a wellbore, of which the anchor tool includes a body, engaging members coupled with the body and configured to expand outward from the body, and a sliding sleeve positioned at least partially around the body. When the sliding sleeve is in a first position, the sliding sleeve covers the engaging members and restrains the engaging members from expanding, and when the sliding sleeve is in a second position, the sliding sleeve uncovers the engaging members and permits the engaging members to expand. The anchor tool also includes a friction-inducing member positioned around the body, and a shearable member coupled with the friction-inducing member and the body. The shearable member restrains the friction-inducing member, causing the friction-inducing member to maintain the sliding sleeve in the first position, until the shearable member is sheared.

14 Claims, 4 Drawing Sheets



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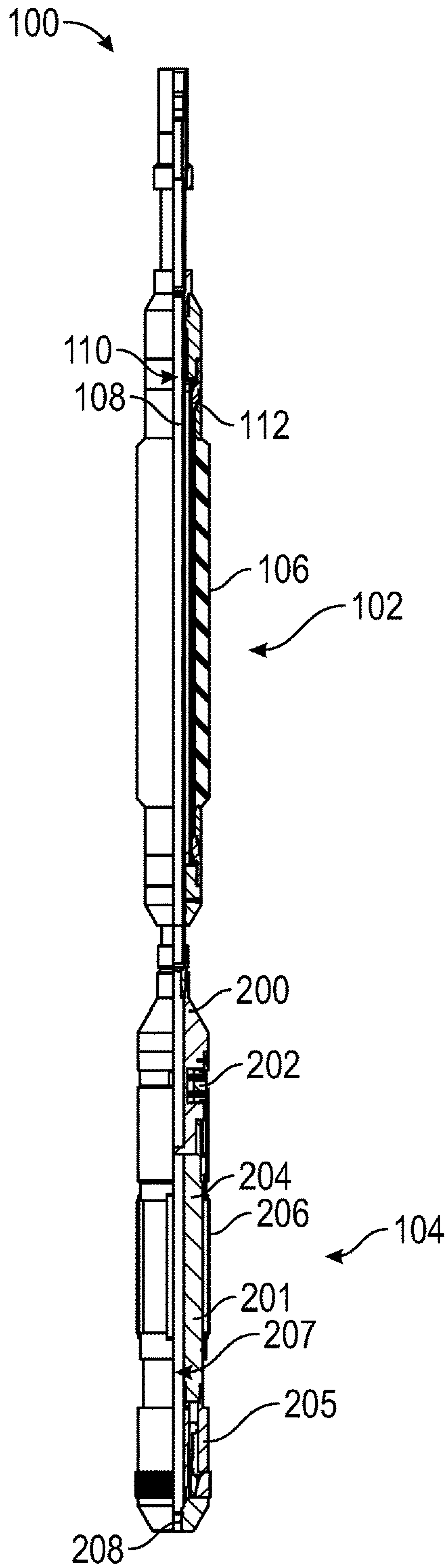
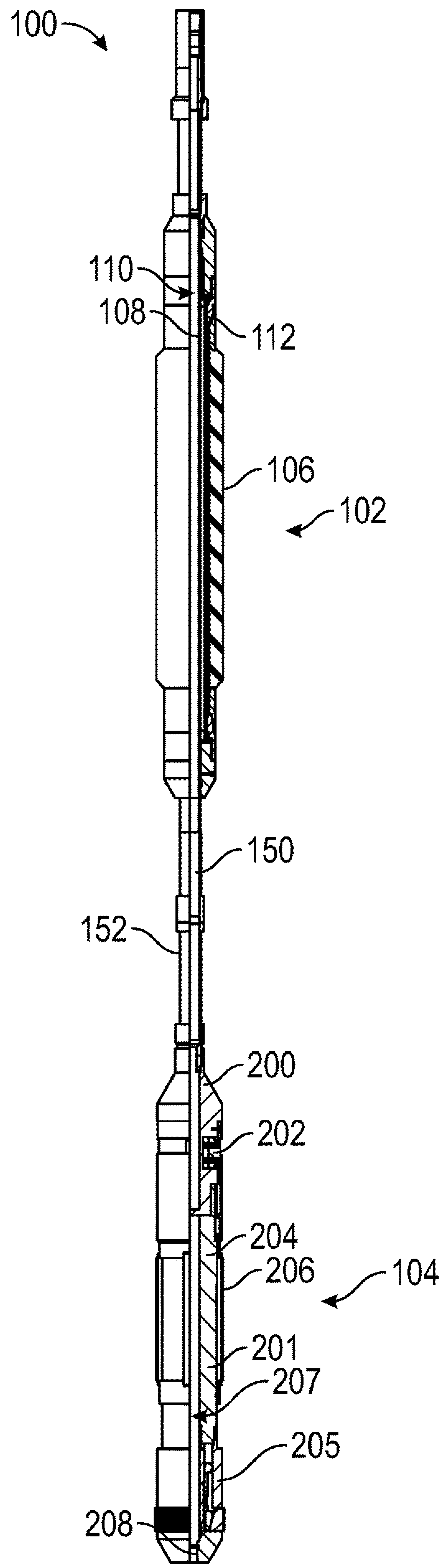

100
110
108
112
106
102
200
202
204
206
104
201
207
205
208
FIG. 1A


100
110
108
112
106
102
150
152
200
202
204
206
104
201
207
205
208
FIG. 1B

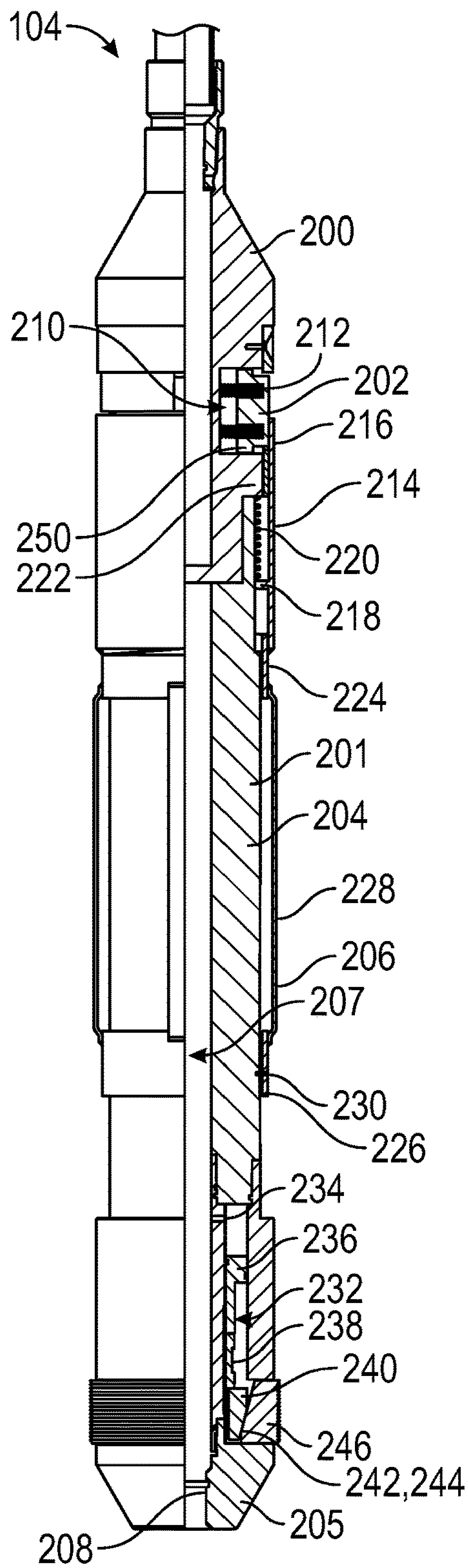
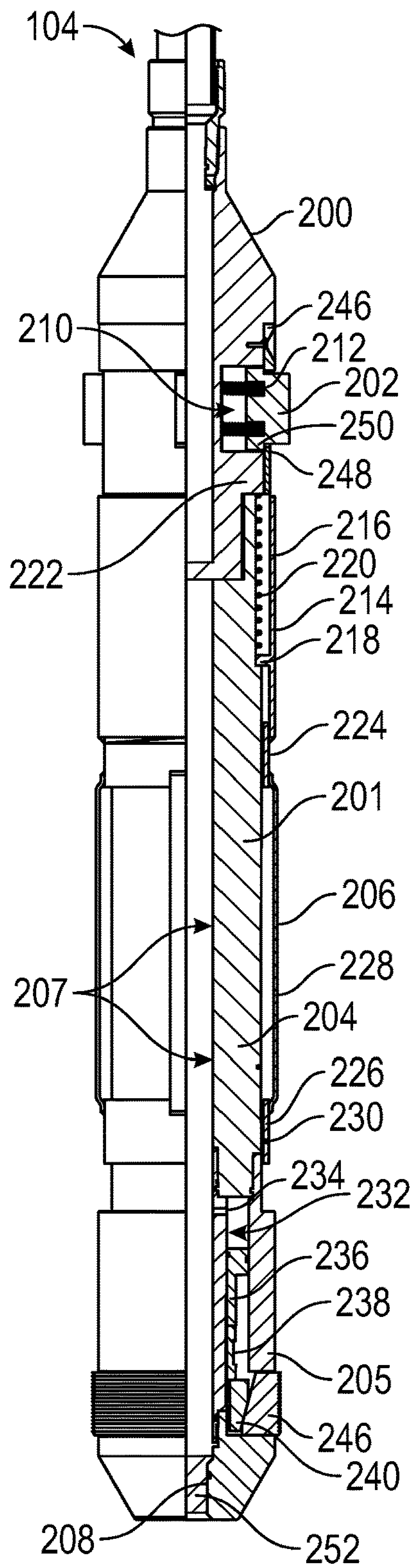

104
200
210
212
202
216
214
250
222
220
218
224
201
204
228
206
207
230
226
234
236
232
238
240
246
242,244
205
208

FIG. 2


104
200
246
210
212
202
250
248
222
216
220
214
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224
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226
230
234
232
236
238
205
246
240
208
252

FIG. 3

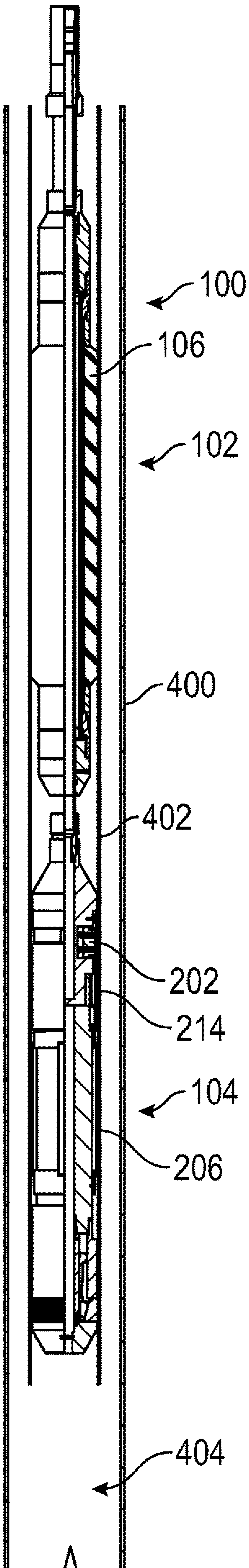

FIG. 4

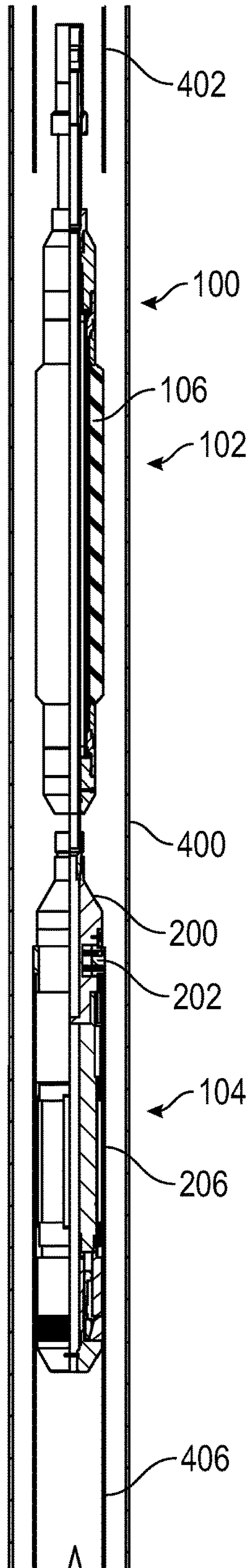

FIG. 5

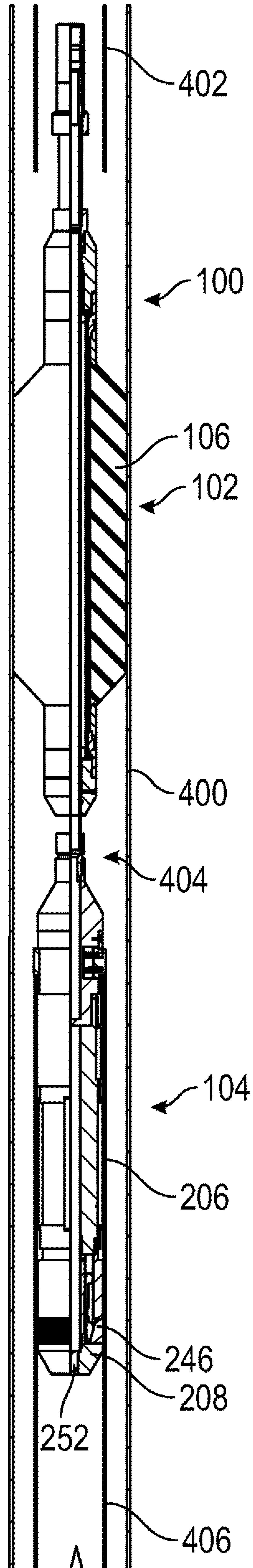

FIG. 6

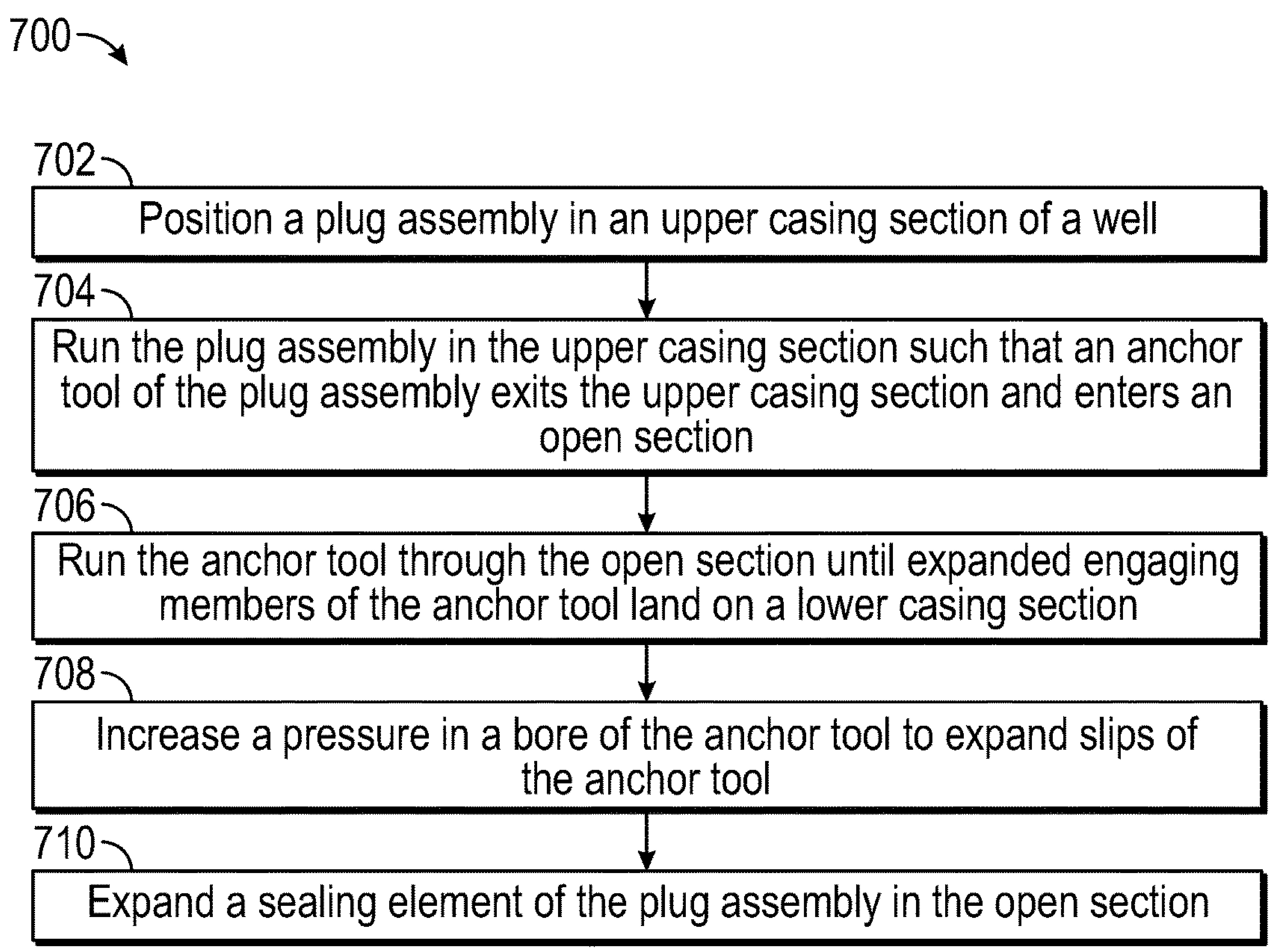
700
702
Position a plug assembly in an upper casing section of a well
704
Run the plug assembly in the upper casing section such that an anchor tool of the plug assembly exits the upper casing section and enters an open section
706
Run the anchor tool through the open section until expanded engaging members of the anchor tool land on a lower casing section
708
Increase a pressure in a bore of the anchor tool to expand slips of the anchor tool
710
Expand a sealing element of the plug assembly in the open section

FIG. 7

WELL PLUG ANCHOR TOOL

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims priority to U.S. Provisional Patent Application having Ser. No. 62/221,325, which was filed on Sep. 21, 2015 and is incorporated herein by reference in its entirety.

BACKGROUND

Wells may be plugged and abandoned for a variety of reasons, but generally because the formation from which hydrocarbon was being produced is no longer economical or productive. There are several ways to plug and abandon a well; however, regulations typically require a cement plug to be set in the wellbore to permanently isolate an upper portion of the wellbore from a lower portion thereof.

The cement used for these plugs may have a tendency to form cracks or other pathways that allow fluid traversal past the plug. Accordingly, inflatable sealing elements may be used along with the cement. To use such inflatable sealing elements, a section of the casing may be milled out or otherwise removed. Next, a tool including a sealing element is run within the casing, until positioned where the section of casing has been removed. The plug is then inflated, and cement is pumped down onto the top of the inflatable sealing element, such that the sealing element and the cement combine to isolate the lower portion of the well.

However, the cement being pumped down applies a force on the plug, which may sometimes move the plug away from its desired position, e.g., further into the well. In some cases, this inability to remain in place may affect the plugging of the well.

SUMMARY

Embodiments of the disclosure may provide an anchor tool for a plug. The anchor tool includes a body, engaging members coupled with the body and configured to expand outward from the body, and a sliding sleeve positioned at least partially around the body. When the sliding sleeve is in a first position, the sliding sleeve at least partially covers the engaging members and restrains the engaging members from expanding, and when the sliding sleeve is in a second position, the sliding sleeve uncovers the engaging members and permits the engaging members to expand. The anchor tool may also include a friction-inducing member positioned at least partially around the body, and a shearable member coupled with the friction-inducing member and the body. The shearable member restrains the friction-inducing member, causing the friction-inducing member to maintain the sliding sleeve in the first position, at least until the shearable member is sheared.

Embodiments of the disclosure may also provide a plug assembly. The plug assembly includes a plug having an expandable sealing element, and an anchor tool coupled to the plug. The anchor tool includes a body, engaging members coupled with the body and configured to move in a radial direction outward with respect to the body, and a sliding sleeve positioned at least partially around the body, wherein, in a first position, the sliding sleeve at least partially covers the engaging members and restrains the engaging members radially inward, and in a second position, the sliding sleeve uncovers the engaging members. The assembly also includes a friction-inducing member positioned at least partially around the body, and a shearable member coupled with the friction-inducing member and the body. The shearable member restrains the friction-inducing member, causing the friction-inducing member to maintain the sliding sleeve in the first position, at least until the shearable member is sheared

Embodiments of the disclosure may further provide a method for deploying a plug in a well. The method includes positioning a plug assembly including the plug and an anchor tool in an upper casing section. The anchor tool includes a body, a sliding sleeve disposed at least partially around the body, the sliding sleeve being slidable between a first position and a second position, the first and second positions being axially offset along the body, engaging members that are restrained radially against the body of the anchor tool by the sliding sleeve in the first position, and a friction-inducing member configured to transmit an axial force incident thereon to the sliding sleeve. The friction-inducing member includes staves that are sized to engage an inner diameter of the upper casing so as to generate a drag force. The anchor tool also includes a shearable member coupling the friction-inducing member with the body. The drag force shears the shearable member. The method also includes running the plug assembly through the upper casing, such that the anchor tool exits the upper casing section and enters an open section downhole of the upper casing and uphole of a lower casing section. The drag force is relieved when the anchor tool exits the upper casing section. The sliding sleeve moves to the second position in response to the drag force being relieved, and the engaging members expand in response to the sliding sleeve moving to the second position. The method also includes running the anchor tool through the open section until the engaging members land on the lower casing section.

Embodiments of the disclosure may additionally provide a method for deploying a plug assembly in a well having an upper casing, an open section and a lower casing. The method includes running the plug assembly through the upper casing, the plug assembly having a plug and an anchor tool, with the anchor tool including engaging members and slip members. The method also includes running the plug assembly into the open section of the well until the engaging members land on the lower casing, and expanding the slip members into engagement with the lower casing.

BRIEF DESCRIPTION OF THE DRAWINGS

The present disclosure may best be understood by referring to the following description and accompanying drawings that are used to illustrate some embodiments. In the drawings:

FIG. **1**A illustrates a side, half-sectional view of a plug assembly, according to an embodiment.

FIG. **1**B illustrates a side, half-sectional view of the plug assembly, according to another embodiment.

FIG. **2** illustrates a side, half-sectional view of an anchor tool, in a first, retracted configuration, of the inflatable plug assembly, according to an embodiment.

FIG. **3** illustrates a side, half-sectional view of the anchor tool in a second, expanded configuration, according to an embodiment.

FIGS. **4**-**6** illustrate three side, half-sectional views of the plug assembly being run into and set in a wellbore, according to an embodiment.

FIG. **7** illustrates a flowchart of a method for plugging a well, according to an embodiment.

DETAILED DESCRIPTION

The following disclosure describes several embodiments for implementing different features, structures, or functions of the invention. Embodiments of components, arrangements, and configurations are described below to simplify the present disclosure; however, these embodiments are provided merely as examples and are not intended to limit the scope of the invention. Additionally, the present disclosure may repeat reference characters (e.g., numerals) and/or letters in the various embodiments and across the Figures provided herein. This repetition is for the purpose of simplicity and clarity and does not in itself dictate a relationship between the various embodiments and/or configurations discussed in the Figures. Moreover, the formation of a first feature over or on a second feature in the description that follows may include embodiments in which the first and second features are formed in direct contact, and may also include embodiments in which additional features may be formed interposing the first and second features, such that the first and second features may not be in direct contact. Finally, the embodiments presented below may be combined in any combination of ways, e.g., any element from one exemplary embodiment may be used in any other exemplary embodiment, without departing from the scope of the disclosure.

Additionally, certain terms are used throughout the following description and claims to refer to particular components. As one skilled in the art will appreciate, various entities may refer to the same component by different names, and as such, the naming convention for the elements described herein is not intended to limit the scope of the invention, unless otherwise specifically defined herein. Further, the naming convention used herein is not intended to distinguish between components that differ in name but not function. Additionally, in the following discussion and in the claims, the terms "including" and "comprising" are used in an open-ended fashion, and thus should be interpreted to mean "including, but not limited to." All numerical values in this disclosure may be exact or approximate values unless otherwise specifically stated. Accordingly, various embodiments of the disclosure may deviate from the numbers, values, and ranges disclosed herein without departing from the intended scope. In addition, unless otherwise provided herein, "or" statements are intended to be non-exclusive; for example, the statement "A or B" should be considered to mean "A, B, or both A and B."

FIG. **1A** illustrates a side, half-sectional view of a plug assembly **100**, according to an embodiment. In some embodiments, the assembly **100** may be tailored for use in well plugging and abandonment (P&A) operations, but in other embodiments, the assembly **100** may be employed in other contexts. The assembly **100** may generally include a plug **102** and an anchor tool **104**.

In an embodiment, the plug **102** may include a sealing element **106**, which may be configured to expand in the well, e.g., upon introduction of a pressurized fluid, such as a cement slurry. In some embodiments, the sealing element **106** may be inflatable. However, in other embodiments, the sealing element **106** may be swellable, mechanically-expandable, or otherwise expandable. Further, the plug **102** may include a hollow mandrel **108** about which the sealing element **106** is positioned. The mandrel **108** may define a bore **110** therethrough, which may provide fluid communication axially through the plug **102**. The plug **102** may also include a spring-loaded valve **112**, which may serve as a one-way poppet valve that allows fluid of at least a predetermined pressure to move from the bore **110** and into the sealing element **106**, to radially expand (e.g., inflate) the sealing element **106**.

The anchor tool **104** may be positioned "below" the inflatable plug **102**, in at least some embodiments. It will be appreciated that directional terms such as "above," "upper," "upward," "below," "lower," "downward," etc. are employed herein to refer to the relative positioning of elements as shown in the figures, but are not to be considered in an absolute sense. For example, the anchor tool **104** is "below" the plug **102**, but, if positioned in a horizontal section of a well, may actually be horizontally-aligned with the inflatable plug **102**. Thus, the plug **102** may also be thought of as being "uphole" of the anchor tool **104**, at least when disposed in a well, and conversely, the anchor tool **104** may be considered "downhole" of the plug **102**.

The anchor tool **104** may generally include a body **201**, which may include a single unitary piece or two or more different pieces that are attached together. For example, the body **201** may include a cap **200** at an upper end of the body **201**, a central sub **204**, and a shoe **205** at the lower end of the body **201**. In some embodiments, the cap **200** and the shoe **205** may be threaded onto the central sub **204**, as shown. In other embodiments, the cap **200** and the shoe **205** may be otherwise connected to the central sub **204**, or integral therewith.

Further, the anchor tool **104** may include expandable engaging members ("dogs") **202**, which may be disposed in the cap **200**. Several dogs **202** may be employed, for example, four. The dogs **202** may be disposed at uniform angular intervals around the body **201**, but in other embodiments, may be disposed at irregular intervals or in any other configuration. A friction-inducing member **206** may be disposed at least partially around the central sub **204**, e.g., below the cap **200** and/or below the dogs **202**. The structure and function of the dogs **202** and the friction-inducing member **206** will be described in greater detail below.

The cap **200**, the central sub **204**, and the shoe **205** may be hollow, defining a bore **207** that extends through the anchor tool **104**. The bore **207** may communicate with the bore **110** of the plug **102**, such that fluid communication may be permitted axially through the assembly **100**, from the top to the bottom. In addition, the shoe **205** may include a seat **208**, which may be configured to catch or otherwise receive a ball, dart, or another type of impeding member, so as to restrict fluid communication through the assembly **100**.

FIG. **1B** illustrates a side, half-sectional view of the assembly **100** according to another embodiment. In this embodiment, a tubular **150** may extend downward from the plug **102**, toward the anchor tool **104**. A flexible joint (e.g., a "knuckle") **152** may be connected to the tubular **150**, and may also be connected to the anchor tool **104**. The tubular **150** and the flexible joint **152** may be connected together, end-to-end, such that a bore is defined therebetween, allowing for communication between the plug **102** and the anchor tool **104** therethrough. The flexible joint **152** may accommodate torque and/or bending force between the plug **102** and the anchor tool **104**, e.g., so as to allow for a range of rotational and/or lateral pivoting therebetween. This may facilitate running the assembly **100** into the well. Further, the flexible joint **152** may compensate for eccentricities between the larger tubular (e.g., casing) that the plug **102** may be positioned in and the smaller tubular (e.g., casing) that the anchor tool **104** may be positioned in.

Referring now in greater detail to the anchor tool **104**, FIG. **2** illustrates a side, half-sectional view thereof, in a first or retracted configuration, according to an embodiment. As shown, the cap **200** defines a recess **210** in which the illustrated dog **202** is disposed. In some embodiments, several recesses **210** may be provided, e.g., formed as blind holes extending inward into the cap **200**, allowing for the individual dogs **202** to be disposed in individual recesses **210**. Any number of dogs **202** and recesses **210** may be employed.

Further, one or more first biasing members (two shown: **212**) may extend between the radially-inner wall of the recess **210** and the radially-inner side of the dog **202**. The first biasing members **212** may be springs, which may be compressed when the anchor tool **104** is in the first configuration, such that the basing members **212** tend to push the dogs **202** radially outwards, away from the body **201**.

The anchor tool **104** may also include a sliding sleeve **214**, which may, in a first position, be positioned around the cap **200** and, as shown, around the central sub **204**. In the illustrated first position of the sleeve **214**, an end portion **216** of the sleeve **214**, e.g., near the upper end of the sliding sleeve **214**, may cover the dogs **202**, preventing the biasing members **212** from expanding the dogs **202**. The sliding sleeve **214** may further include a first piston **218** extending radially inward, toward the central sub **204**. A second biasing member **220** may extend between a shoulder **222**, e.g., of the cap **200**, and the first piston **218**. The second biasing member **220** may be, for example, a spring coiled around the central sub **204**, and may be compressed between the first piston **218** and the shoulder **222**. Accordingly, the second biasing member **220** may apply a force on the first piston **218** in a direction away from the cap **200**, and thus tending to push the sleeve **214** away from the dogs **202**.

The friction-inducing member **206**, received around the central sub **204**, may optionally be coupled to the sliding sleeve **214**. For example, the friction-inducing member **206** may include two end collars **224**, **226**, which may be spaced axially apart, and a plurality of ribs or staves **228** (e.g., bow springs) extending therebetween and connected or integral thereto. The upper end collar **224** may be connected to the sliding sleeve **214**, e.g., by welding, fastening, brazing, or in any other manner. In another embodiment, the upper end collar **224** may extend farther axially upward than is illustrated, such that the upper end collar **224** abuts the first piston **218**. In such case, the upper end collar **224** may not be fixed to the sleeve **214**. The lower end collar **226** may be coupled to the central sub **204** via a shearable member **230**, such as a shear pin, shear screw, shear threads, etc.

Proceeding downward in FIG. **2** to the shoe **205**, the shoe **205** may define an annulus **232** therein, e.g., around and separated from the bore **207**. A pressure port **234** may extend radially at least partially through the shoe **205**, so as to fluidly connect the annulus **232** with the bore **207**. As such, pressure within the bore **207** may be communicated with the annulus **232** via the pressure port **234**. Within the annulus **232**, the anchor tool **104** may include a second piston **236**. The second piston **236** may, as shown, be positioned below the pressure port **234**, such that increased pressure in the bore **207** may tend to push the second piston **236** downward in the annulus **232**, e.g., away from the dogs **202**.

A ratchet or lock ring **238** may also be positioned in the annulus **232**. The lock ring **238** may include teeth on its radially-inner side, which may engage complementary teeth in the shoe **205**. The engagement of the teeth may allow the lock ring **238** to move in one direction, e.g., downward, but may prevent movement in a reverse direction. Further, the lock ring **238** may abut the second piston **236**, such that movement of the second piston **236** downward causes the lock ring **238** to move accordingly. In some embodiments, the lock ring **238** and the second piston **236** may be attached together, integrally formed, or separate pieces.

The lock ring **238** in turn may engage a cone **240**. The cone **240** may have a tapered outer surface **242**, which may engage a tapered inner surface **244** of one or more slips **246** that are configured to slide outward with respect to the shoe **205**. Accordingly, downward movement of the cone **240** may be translated into outward movement of the slips **246** by engagement between the tapered surfaces **242**, **244**.

Referring now to FIG. **3**, the anchor tool **104** is shown moved into a second or expanded configuration, according to an embodiment. In order to move into the expanded configuration, first the shearable member **230** shears or otherwise breaks apart. The shearing of the shearable member **230** will be described in greater detail below. With the shearable member **230** sheared, the friction-inducing member **206**, and thus the sliding sleeve **214**, are free to move downward.

The second biasing member **220** may provide a force that, if unopposed, pushes the sleeve **214** (via the first piston **218**) downward as the second biasing member **220** expands. This moves the end portion **216** of the sleeve **214** away from the dogs **202**, and into a second position. In the second position, the end portion **216** of the sleeve **214** may not cover the dogs **202**, thus allowing the dogs **202** to expand radially outward under the force of the first biasing members **212**. One or more retainers (two shown: **246**, **248**) may be positioned so as to overhang the recesses **210**, and may engage a flange **250** of the dogs **202**, so as to prevent the dogs **202** from moving entirely out of their respective recesses **210**.

Furthermore, an impeding member (e.g., ball, dart, etc.) **252** may be deployed through the bores **110** (e.g., FIG. **1**A) and **207**, and may be received by the seat **208** in the shoe **205**. The impeding member **252** in the seat **208** may at least partially seal the bore **207**, which may allow for an increase in the pressure therein, with respect to pressure exterior to the assembly **100**. When the bore **207** is pressured up, the pressure may be communicated via the pressure port **234** into the annulus **232** and to the second piston **236**. This may create a pressure differential across the second piston **236**, such that the second piston **236** is pushed downwards. In turn, this may push the lock ring **238** and the cone **240** downwards, thereby causing the slips **246** to be driven radially outwards.

FIGS. **4-6** illustrate an example of deploying the assembly **100** into a wellbore **400**, according to an embodiment. Referring specifically to FIG. **4**, the wellbore **400** may include an upper casing section **402** and an open section **404**. As shown in FIGS. **5** and **6**, the wellbore **400** may additionally include a lower casing section **406**. The open section **404** may be formed by milling out or otherwise removing the casing at this position.

Referring additionally to FIGS. **2** and **3**, the anchor tool **104** may initially have the first configuration (FIG. **2**) prior to being deployed into the upper casing section **402**. The staves **228** of the friction-inducing member **206** may, however, have an undeflected outer diameter that is equal to or slightly larger than the inner diameter of the upper casing section **402**. Accordingly, as the anchor tool **104** is run into the upper casing section **402**, the staves **228** may engage the upper casing section **402**, generating a drag force on the friction-inducing member **206**, and thus on the shearable member **230**. The drag force may overcome the shearable member **230**, breaking the shearable member **230**. Further, the drag force may be higher than the biasing force applied by the second biasing member **220**, and thus the drag force on the friction-inducing member **206**, which is transmitted to the sleeve **214**, may maintain the end portion **216** of the sleeve **214** covering the dogs **202** and preventing their expansion radially outwards, despite the shearing of the shearable member **230**.

When the anchor tool **104** exits the upper casing section **402** and enters the open section **404**, this drag force may be relieved. As such, the sleeve **214** may be pushed downward by the second biasing member **220** into the second position, thereby uncovering the dogs **202** and allowing the dogs **202** to expand (as shown in FIG. **2**). As shown in FIG. **5**, the expanded dogs **202** may thus provide an outwardly-extending shoulder in the cap **200** of the anchor tool **104**. The outer diameter defined by the dogs **202** may be larger than the inner diameter of the lower casing section **406**. Thus, as shown in FIG. **4**, the dogs **202** may catch on the lower casing section **406**, and may prevent the anchor tool **104** from moving fully therein (e.g., at least the cap **200** above the dogs **202** may protrude upwards) and thus ensuring that the plug **102** is not able to be received into the lower casing section **406**.

Further, the impeding member **252** may be dropped into (e.g., pumped down to) the seat **208**, as shown in FIG. **6**. Accordingly, as explained above, the pressure in the bore **207** may be increased, leading to the slips **246** expanding outwards. The slips **246**, being below the dogs **202** and extending into the lower casing section **406**, may engage the interior of the lower casing section **406**. The slips **246** may thus serve to prevent upward movement of the anchor tool **104**, e.g., caused by pressure fluctuations below the anchor tool **104** in the wellbore **400**. With the dogs **202** and the slips **246** expanded and engaged with the lower casing section **406**, the anchor tool **104** may be prevented from movement in either axial direction, and, as a result, the plug **102** is also prevented from moving in either axial direction.

Continued application of pressure into the bore **207** may then cause the sealing element **106** to expand into engagement with the wellbore **400** in the open section **404**. Thereafter, cement may be (e.g., continued to be) pumped into the wellbore **400**, such that a cement plug is formed above the sealing element **106**.

FIG. **7** illustrates a flowchart of a method **700** for deploying a plug in a wellbore, according to an embodiment. The method **700** may be executed using the plug assembly **100** as shown in and described above with reference to FIGS. **1**-**6**, and is thus described herein with reference thereto. However, it will be appreciated that the method **700** may be executed using other types of plugs or other tools, and thus embodiments of the method **700** should not be considered limited to the plug assembly **100**.

The method **700** may begin by positioning the plug assembly **100** in the upper casing section **402** of a wellbore **400**, as at **702**. The plug assembly **100** may include the plug **102** and the anchor tool **104**, with the anchor tool **104** including the friction-inducing member **206**. The friction-inducing member **206** may include the staves **228**, which may drag against the upper casing section **402**, resulting in a drag force when the plug assembly **100** is moved (run) in the upper casing section **402**. Such drag force may shear the shearable member **230**, and may serve to prevent the sleeve **214** from moving into the second position and uncovering the dogs **202**.

The method **700** may also include running the plug assembly in the upper casing section **402** such that the anchor tool **104** of the plug assembly **100** exits the upper casing section **402** and enters the open section **404**, where the casing has been removed, as at **704**. This may relieve the drag force on the friction-inducing member **206**, as the staves **228** may no longer contact the casing of the upper casing section **402**. Accordingly, the sleeve **214** may be moved into the second position, uncovering the dogs **202** and allowing the dogs **202** to expand.

The method **700** may further include running the anchor tool though the open section until the expanded engaging members (dogs) **202** of the anchor tool **104** land on the lower casing section **406**, as at **706**. The dogs **202** in the expanded configuration, landed on the top of the lower casing section **406**, may prevent the anchor tool **104** and the plug **102** from proceeding fully into the lower casing section **406**, thus preventing downward movement of the plug **102**.

The method **700** may then include increasing a pressure in the bore **207** of the anchor tool **104** to expand the slips **246** of the anchor tool **104**, as at **708**. The slips **246** may be positioned within the lower casing section **406**, and thus, by expanding, may engage therewith. This may serve to prevent, or at least resists, upward displacement of the anchor tool **104** and the plug **102**, e.g., under forces applied from below the anchor tool **104** in the wellbore **400**.

The foregoing has outlined features of several embodiments so that those skilled in the art may better understand the present disclosure. Those skilled in the art should appreciate that they may readily use the present disclosure as a basis for designing or modifying other processes and structures for carrying out the same purposes and/or achieving the same advantages of the embodiments introduced herein. Those skilled in the art should also realize that such equivalent constructions do not depart from the spirit and scope of the present disclosure, and that they may make various changes, substitutions, and alterations herein without departing from the spirit and scope of the present disclosure.

What is claimed is:

1. An anchor tool for a plug, comprising:

a body;

engaging members coupled with the body and configured to expand outward from the body;

a sliding sleeve positioned at least partially around the body, wherein, when the sliding sleeve is in a first position, the sliding sleeve at least partially covers the engaging members and restrains the engaging members from expanding, and when the sliding sleeve is in a second position, the sliding sleeve uncovers the engaging members and permits the engaging members to expand;

a friction-inducing member positioned at least partially around the body;

a shearable member coupled with the friction-inducing member and the body, wherein the shearable member restrains the friction-inducing member, causing the friction-inducing member to maintain the sliding sleeve in the first position, until the shearable member is sheared; and

a biasing member engaging the body and the sliding sleeve, wherein the sliding sleeve is biased toward the second position by the biasing member.

2. The tool of claim **1**, further comprising other biasing members positioned between the engaging members and the body, wherein the engaging members are biased radially outwards by the other biasing members.

3. The tool of claim **1**, wherein the friction-inducing member comprises:

a first end collar that is coupled to the sliding sleeve;

a second end collar that is coupled to the shearable member; and

a plurality of ribs extending between the first and second end collars.

4. The tool of claim **1**, wherein the engaging members are retained in at least one recess formed in the body, such that, when expanded, the engaging members prevent the anchor tool from moving into a casing having an inner diameter that is smaller than an expanded outer diameter of the engaging members.

5. The tool of claim **1**, wherein the friction-inducing member comprises a plurality of staves that are configured to engage a casing and generate a drag force, wherein the drag force shears the shearable member and causes the friction-inducing member to restrain the sliding sleeve in the first position.

6. An anchor tool for a plug, comprising:

a body defining a bore therethrough, an annulus around the bore, and a pressure port extending radially in the body, between the bore and the annulus;

slips that are radially expandable;

a piston disposed in the annulus, wherein a pressure in the bore forces the piston toward the slips, causing the slips to expand;

engaging members coupled with the body and configured to expand outward from the body;

a sliding sleeve positioned at least partially around the body, wherein, when the sliding sleeve is in a first position, the sliding sleeve at least partially covers the engaging members and restrains the engaging members from expanding, and when the sliding sleeve is in a second position, the sliding sleeve uncovers the engaging members and permits the engaging members to expand;

a friction-inducing member positioned at least partially around the body; and

a shearable member coupled with the friction-inducing member and the body, wherein the shearable member restrains the friction-inducing member, causing the friction-inducing member to maintain the sliding sleeve in the first position, until the shearable member is sheared.

7. The tool of claim **6**, further comprising:

a lock ring abutting the piston; and

a wedge abutting the lock ring and having a tapered outer surface, at least one of the slips having a tapered inner surface that slides against the tapered outer surface of the wedge, such that axial movement of the wedge drives the at least one of the slips radially outwards.

8. A plug assembly, comprising:

a plug having an expandable sealing element; and

an anchor tool coupled to the plug, the anchor tool comprising:

a body;

engaging members coupled with the body and configured to move in a radial direction outward with respect to the body;

a sliding sleeve positioned at least partially around the body, wherein, in a first position, the sliding sleeve at least partially covers the engaging members and restrains the engaging members radially inward, and in a second position, the sliding sleeve uncovers the engaging members;

a friction-inducing member positioned at least partially around the body; and

a shearable member coupled with the friction-inducing member and the body, wherein the shearable member restrains the friction-inducing member, causing the friction-inducing member to maintain the sliding sleeve in the first position, until the shearable member is sheared,

wherein the anchor tool is coupled to a lower end of the plug, and wherein a bore of the anchor tool is in communication with a bore of the plug, such that fluid communication is permitted axially through the assembly,

wherein the anchor tool is configured to be disposed partially in a lower casing section when the sliding sleeve is in the second position and the engaging members are expanded, thereby preventing the plug from moving into the lower casing section, and

wherein the anchor tool comprises slips that are configured to expand into engagement with the lower casing section, to prevent the anchor tool from moving uphole in a well.

9. The assembly of claim **8**, further comprising a flexible joint between the plug and the anchor tool.

10. A method for deploying a plug in a well, comprising:

positioning a plug assembly comprising the plug and an anchor tool in an upper casing section, wherein the anchor tool comprises:

a body;

engaging members coupled with the body and configured to expand outward from the body;

a sliding sleeve positioned at least partially around the body, wherein, when the sliding sleeve is in a first position, the sliding sleeve at least partially covers the engaging members and restrains the engaging members from expanding, and when the sliding sleeve is in a second position, the sliding sleeve uncovers the engaging members and permits the engaging members to expand;

a friction-inducing member positioned at least partially around the body;

a shearable member coupled with the friction-inducing member and the body, wherein the shearable member restrains the friction-inducing member, causing the friction-inducing member to maintain the sliding sleeve in the first position, until the shearable member is sheared; and

a biasing member engaging the body and the sliding sleeve, wherein the sliding sleeve is biased toward the second position by the biasing member

running the plug assembly through the upper casing section, such that the anchor tool exits the upper casing section and enters an open section downhole of the upper casing and uphole of a lower casing section, wherein a drag force generated by the friction-inducing member engaging the upper casing section is relieved when the anchor tool exits the upper casing section, the sliding sleeve moves to the second position in response to the drag force being relieved, and the engaging members expand in response to the sliding sleeve moving to the second position; and

running the anchor tool through the open section until the engaging members land on the lower casing section.

11. The method of claim **10**, further comprising:

deploying an impeding member into a seat of the anchor tool; and

increasing a pressure in a bore of the anchor tool, wherein increasing the pressure causes slips of the anchor tool to expand into engagement with the lower casing section, to prevent uphole movement of the anchor tool.

12. The method of claim **10**, further comprising expanding a sealing element of the plug to seal the well.

13. The method of claim **10**, wherein relieving the drag force allows the biasing member to expand against the sliding sleeve, forcing the sliding sleeve away from the engaging members.

14. The method of claim **13**, wherein the drag force applied to the friction-inducing member forces the sliding sleeve to compress the biasing member.

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